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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,433	01/14/2005	Kazuya Goto	264595US0PCT	1537

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EXAMINER	
PIZIALI, ANDREW T	
ART UNIT	PAPER NUMBER
1771	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/521,433	GOTO ET AL.	
	Examiner	Art Unit	
	Andrew T. Piziali	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) *1,3 and 15-36* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2 and 4-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on 11/21/2006 has been entered. The examiner has withdrawn the objection to the specification based on the amendment to the abstract. The examiner has withdrawn the 35 USC 112 rejections of claims 2 and 4-14 based on the amendments to the claims.

Claim Rejections - 35 USC § 102/103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 4-7, 11 and 13 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 6,391,436 to Xu et al. (hereinafter referred to as Xu).

Regarding claims 2, 4-7, 11 and 13, Xu discloses a prepreg comprising a reinforcing fiber substrate sheet containing reinforcing fiber, and a matrix resin, wherein said matrix resin exists on both surfaces of the substrate, and a portion inside the substrate into which the matrix resin has not been impregnated is continuous (see entire document including column 6, lines 40-63, column 7, lines 52-58, and column 15, lines 10-13).

In the event that it is shown that Xu does not disclose the claimed invention with sufficient specificity, the invention is obvious because Xu discloses that claimed constituents (such as reinforcing fiber substrate, matrix resin substrate surfaces, and substrate air channels) and discloses that they may be formed in combination. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the claimed composite motivated by the expectation of successfully practicing the invention of Xu.

Regarding claims 4-7, Xu discloses that the matrix resin may be a thermosetting resin composition (column 9, lines 40-51).

Regarding claim 5, Xu discloses that the resin may be cured at a temperature on the order of about 55 to about 75C (column 9, lines 25-38). Therefore, it appears that the resin is curable by holding at 90C for 2 hours. In the event that it is shown that resins would not inherently possess the claimed property, Xu also discloses that higher and lower cure temperatures can be utilized (column 9, lines 25-38). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the make the resin with any suitable curing temperature and time, such as 90C for 2 hours, because it is within the general skill of a worker in the art to select a known curing temperature and time on the basis of its suitability and desired characteristics.

Regarding claim 6, Xu discloses that the minimum viscosity of the resin may be no more than 1000 poise (column 9, lines 16-24).

Regarding claim 7, Xu discloses that the resin composition may comprise epoxy resin as a primary component (column 9, lines 40-52).

Regarding claim 11, Xu discloses that the reinforcing fibers may be carbon fiber or glass fiber (column 7, lines 52-58).

Regarding claim 13, Xu discloses that the substrate may be a unidirectional, woven, knitted, braided, mat, and the like (column 7, lines 52-58).

Claim Rejections - 35 USC § 103

5. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,391,436 to Xu as applied to claims 2, 4-7, 11 and 13 above, and further in view of USPN 5,279,893 to Hattori et al. (hereinafter referred to as Hattori).

Regarding claims 8-10, Xu discloses that a thermosetting and thermoplastic resin mixture may be used (column 9, lines 40-52), but Xu does not appear to mention the use of a mixture wherein the thermoplastic is not dissolved within the thermosetting resin composition. Hattori discloses that it is known in the prepreg art to use a thermosetting and thermoplastic resin mixture wherein the thermoplastic is not dissolved with the thermosetting resin composition, to give the prepreg excellent toughness (see entire document including column 2, lines 25-44). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the resin from any suitable resin material, such as a thermosetting and thermoplastic resin mixture wherein the thermoplastic is not dissolved with the thermosetting

resin composition, as taught by Hattori, because the resin would provide the prepreg with excellent toughness and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

Regarding claims 9 and 10, Hattori discloses that the fibers may be staple fibers (column 4, lines 5-15). Considering that staple fibers have lengths of from 1 inch to 8 inches (25.4 to 203 mm), Hattori discloses that the fibers may have a length of 1 to 50 mm. It is noted that Hattori also discloses that the fibers may have any length sufficient enough to be paralleled (column 4, lines 5-15). Considering that fibers of 1 to 50 mm may be paralleled, Hattori discloses that claimed fiber length with sufficient specificity.

Regarding claim 10, Hattori discloses that the fibers may have a size of 500 denier (56 tex) or less (column 4, lines 5-15).

6. Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,391,436 to Xu as applied to claims 2, 4-7, 11 and 13 above, and further in view of USPN 6,045,898 to Kishi et al. (hereinafter referred to as Kishi).

Regarding claim 12, Xu is silent with regards to prepreg substrate fiber weight, therefore, it would have been necessary and thus obvious to look to the prior art for conventional substrate weights. Kishi provides this conventional teaching showing that it is known in the prepreg art to use a substrate weight of 100 to 320 g/m^2 (see entire document including column 14, lines 44-51 and claim 15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the prepreg with a substrate weight of 100 to 320 g/m^2, as taught by Kishi, motivated by the expectation of successfully practicing the invention of Xu and because the prepreg would possess the desired tackiness and smoothness.

Regarding claim 14, Xu is silent with regards to prepreg substrate thickness, therefore, it would have been necessary and thus obvious to look to the prior art for conventional substrate thicknesses. Kishi provides this conventional teaching showing that it is known in the prepreg art to use a substrate thickness of 0.15 to 0.35 mm (150 to 350 μm) (see claim 15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the prepreg with a substrate thickness of 150 to 350 μm, as taught by Kishi, motivated by the expectation of successfully practicing the invention of Xu.

Response to Arguments

7. Applicant's arguments filed 11/21/2006 have been fully considered but they are not persuasive.

The applicant asserts that Xu fails to teach or suggest an inside portion that has not been impregnated and is continuous. The examiner respectfully disagrees. Xu discloses that the resin may be laid onto one or both surfaces (column 6, lines 40-49) of a fiber substrate in the form of a single continuous film (column 6, lines 13-27). Therefore, the inside portion has not been impregnated and is continuous.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to

obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

The applicant asserts that Xu fails to recognize the advantage of an inside portion that is continuous. Applicant's argument is not persuasive because the discovery of an undisclosed property of a known material does not provide a patentable distinction over the art of record.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

atp

1/18/07

ANDREW PIZIALI
PRIMARY EXAMINER